

Amendments to the Claims

This list of claims will replace all prior versions and listings of claims in this application.

Listing of Claims

1. (Currently Amended)

A method for the determination of combustion misfires in an internal combustion engine having a plurality of cylinders,

comprising the steps of:

- (a) measuring at least two successive compression times and expansion times for at least one a cylinder;
- (b) forming the difference between compression times for said at least one cylinder;
- (c) forming the difference between expansion times for said at least one cylinder; and
- (d) forming the difference between the differences calculated in steps (b) and (c),
wherein this difference provides a measure of a combustion misfire.

2. (Previously Presented)

The method as claimed in claim 1, wherein the method is carried out as a function of operating parameters of the internal combustion engine and/or of ambient parameters of the internal combustion engine.

3. (Previously Presented)

The method as claimed in claim 1, the method being carried out for each cylinder of the internal combustion engine.

4. (Previously Presented)

The method as claimed in claim 1, wherein, after the detection of a predefined number of combustion misfires, a fault signal is generated and emitted.

5. (Previously Presented)

The method as claimed in claim 1, wherein a threshold value for the measure of a combustion misfire is formed at least as a function of at least one parameter of the internal combustion engine, no fault signal being generated if the comparison result exceeds or falls short of this threshold value.

6. (Previously Presented)

The method as claimed in claim 2, wherein the method is not carried out in the case of a deviation from permissible value ranges for operating parameters of the internal combustion engine and/or for operating ambient parameters of the internal combustion engine.

7. (Previously Presented)

The method as claimed in claim 1, used in an on-board diagnostic device at least for the internal combustion engine driving a vehicle.

8. (Currently Amended)

The method of claim 4, wherein the vehicle is a passenger vehicle.

9. (Currently Amended)

~~The method of claim 1,~~ A method for the determination of combustion misfires in an internal combustion engine having a plurality of cylinders,

comprising the steps of:

- (a) measuring at least two successive compression times and expansion times for at least two cylinders;
- (b) forming the difference between compression times for said ~~at least one~~ cylinder;
- (c) forming the difference between expansion times for said ~~at least one~~ cylinder; and
forming the difference between the differences calculated in steps (b) and (c), wherein this difference provides a measure of a combustion misfire wherein the step of measuring successive compression times are carried out on two cylinders, with one cylinder providing a first compression time and the other cylinder providing a second compression time; and
the step of measuring successive expansion times are carried out on these same two cylinders, with one cylinder providing one expansion time and the other cylinder providing a second expansion time.

10. (Currently Amended)

A method for the determination of combustion misfires in an internal combustion engine having a plurality of cylinders, wherein at least two successive compression times and expansion times are determined and the ratio of ~~the~~ a difference in compression times to ~~the~~ a difference in expansion times is computed for at least one cylinder of the internal combustion engine, for the determination of combustion misfires a comparison of the change in the compression times with the change in the expansion times being carried out, and the result of the comparison being a measure of a combustion misfire.